

What is claimed is:

1. A method for producing a decorative pre-impregnated
5 sheet, comprising:

providing a decorative layer;

10 applying a mixture comprising a thermohardening
synthetic resin and hard particles to the decorative
layer;

15 applying a wax or a mixture of waxes having a melting
range below a temperature of about 140°C to the
decorative layer, or to the mixture, and

drying the applied mixture at a drying temperature above
the melting range of the wax.

- 20 2. The method according to claim 1, further comprising
pressing the decorative layer, the mixture and the wax
in a hot press at a press temperature to form a
laminate.

- 25 3. A method for producing a decorative laminate comprising:

providing a decorative layer,

30 applying a mixture comprising a thermohardening
synthetic resin and hard particles to the decorative
layer,

35 applying a wax or a mixture of waxes having a melting
range below a temperature of about 140°C to the
decorative layer or to the mixture, and

40 pressing the decorative layer, the mixture and the wax
in a hot press at a press temperature to form a
laminate.

4. A method for producing a decorative laminate, comprising:

providing a decorative layer,

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applying a mixture comprising at least a thermohardening synthetic resin and hard particles to the decorative layer,

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applying a wax or mixture of waxes to the decorative layer or to the mixture, and

pressing the decorative layer, the mixture and the wax in a hot press at a press temperature to form a laminate,

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wherein a melting range of the wax is by more than about 50°C below the press temperature.

- 20 5. A method for producing a decorative laminate board, comprising:

providing a decorative layer,

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applying a mixture comprising a thermohardening synthetic resin and hard particles to the decorative layer,

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applying at least one wax to the decorative layer or to the mixture,

arranging the decorative layer on a supporting substrate, and

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pressing the supporting substrate, the decorative layer, the mixture and the wax in a hot press at a press temperature to form a decorative laminate board,

wherein a melting range of the at least one wax is at least one of below a temperature of about 140°C and by more than 50°C below the press temperature.

- 5 6. The method according to claim 5, wherein the melting range is by more than 60°C lower than the press temperature.
- 10 7. The method according to claim 5, wherein a dwell time in the press is from about 4 to 60 seconds.
8. The method according to claim 5, wherein a pressure of the press is less than 50 bars.
- 15 9. The method according to claim 5, wherein the press temperature is at least equal to or higher than a hardening temperature suitable for hardening the at least one synthetic resin.
- 20 10. The method according to claim 5, wherein the at least one wax has a melting viscosity of less than 75 mPa·s at the press temperature.
- 25 11. The method according to claim 5, further comprising drying the decorative layer with the applied mixture before the pressing, and at a drying temperature within a drying temperature range below the press temperature.
- 30 12. The method according to claim 11, wherein the drying is carried out until a remaining water content is 7% at most, in particular at least 6%.
13. The method according to claim 11, wherein the melting range of the wax is below the drying temperature.
- 35 14. The method according to claim 11, wherein the drying temperature range is about 140°C to 190°C.

15. The method according to claim 11, wherein during the drying, the drying temperature initially has an increasing temperature profile and thereafter a decreasing temperature profile.
- 5 16. The method according to claim 11, wherein a drying time is from 1 to 3 minutes.
- 10 17. The method according to claim 5, wherein the application of the wax is carried out together with the application of the mixture.
- 15 18. The method according to claim 17, wherein the wax is a component of the mixture.
19. The method according to claim 5, wherein the melting range of the wax is above 60°C.
- 20 20. The method according to claim 5, wherein at least 90% of the hard particles have a size below 80 µm.
21. The method according to claim 5, wherein the thermohardening synthetic resin is a melamine resin.
- 25 22. The method according to claim 5, wherein the hard particles are aluminium oxide particles.
23. The method according to claim 5, wherein the wax is a Fisher-Tropsch-Wax.
- 30 24. The method according to claim 5, wherein the at least one wax is comprised in the mixture in an amount of from 0.1 to 5 weight percent of the mixture.
- 35 25. A decorative, pre-impregnated sheet comprising:

a decorative layer, and

a mixture applied to the decorative layer, the mixture comprising at least one thermohardening synthetic resin, hard particles, and at least one wax whose melting range is below a temperature of about 140°C, preferably below a temperature of about 130°C, and in particular below a temperature of about 120°C.

26. A decorative laminate, comprising:

a decorative layer, and

a protective layer fixedly attached to the decorative layer, the protective layer comprising a mixture of at least one thermohardened synthetic resin, hard particles and at least one wax, wherein a melting range of the wax is below a temperature of about 140°C.

27. The decorative laminate according to claim 26, wherein the at least one wax is a Fischer-Tropsch-Wax.

28. The decorative laminate according to claim 26, wherein the hard particles are aluminium oxide particles.

29. The decorative laminate according to claim 26, wherein at least 90% of the hard particles have a size of less than 80 µm.

30. The decorative laminate according to claim 26, wherein the hard particles are present in the mixture in an amount of from 5 to 65 weight percent.

31. The decorative laminate according to claim 26, wherein the thermohardened synthetic resin is one of a melamine resin and a mixture of melamine resins.

32. The decorative laminate according to claim 26, wherein the wax is accumulated on a surface of the laminate.

33. The decorative laminate according to claim 26, wherein a concentration of the wax in the protective layer has a negative gradient in a direction of a depth of the layer.

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34. The decorative laminate according to claim 26, wherein out of all components, the wax forms the largest part of the mass in a surface of the laminate, in particular forms more than half of the mass.

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35. The decorative laminate according to claim 26, wherein an average thickness of the protective layer is between 20 and 30 μm .

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36. A decorative laminate board comprising a supporting substrate on which a decorative laminate according to claim 26 is arranged.

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37. The decorative laminate board according to claim 36 for use as a floor covering.